

one side of the membrane into a definite bulge or pouch (Fig. 3). By constant rotating movements and feeling out with foot and rostrum, the embryo moved into the bulge repeatedly until at last the membrane was ruptured freeing the young snail. The time for embryonic development of these snails under laboratory conditions was eleven and a half days.

The newly hatched snails varied slightly in size. The largest one measured was 425μ in its longest diameter on the ventral surface. The shell of a newly hatched snail measured 306μ by 348μ (Fig. 4.). One complete, finely reticulated whorl is present in the shell of the newly hatched snails as a rule, although there may in some cases be the beginning of a second whorl. As additional whorls are formed after hatching, their thin transparent walls show distinct cross-striations.

DESCRIPTION OF A NEW VARIETY OF VALVATA LEWISI
CURRIER

BY FRANK COLLINS BAKER*

VALVATA LEWISI ONTARIENSIS, new variety.

Shell discoidal, of three whorls, the first one and a half or two flattened and coiled in the same plane, the last one or one and a half free from contact with the preceding whorls and rapidly descending, forming a rounded tube; sutures deeply impressed; sculpture fine and thread-like on the first two whorls, becoming heavier on the last whorl where they develop into sharp, elevated, rib-like lamellae which are more or less equally and rather widely spaced; aperture rounded; umbilical opening of the two first whorls shallow and wide.

Height 3.5; diameter 4.2 mm. Holotype.

Height 2.2; diameter 3.5 mm. Paratype.

*Contribution from the Museum of Natural History, University of Illinois, No. 64.

Type locality: Shakespeare Island Lake, Ontario, Canada. This is a small lake draining into Lake Nipigon. Dredged from a sand and mud bottom, with vegetation, in water 4 feet 1 inch deep.

Types: Museum of Natural History, University of Illinois, No. Z31241. Academy of Natural Sciences, Philadelphia, No. 153471.

This *Valvata* is one of the most striking of the many forms found in northern waters. It starts out as a very good *Valvata lewisi helicoidea* Dall, with flattened whorls and fine sculpture. After making about two turns the whorl leaves its contact with the preceding whorl forming a distinct tube, and uncoiling, like some of the cephalopod shells of Cretaceous time, and the sculpture becomes coarse and rib-like. In this last feature the sculpture is like that of *Valvata sincera nylanderi* Dall, but the form is depressed. The sculpture is quite like typical *lewisi* from Tonawanda Creek, near Batavia, N. Y. The form is almost distinct enough to constitute a distinct species, but as the amount of deflection of the uncoiled last whorl is variable it appears best to consider it a variant of the *helicoidea* type of *lewisi*.

The same form was recently noted in a collection of mollusks from Ontario made by Dr. Alvin R. Cahn of the University of Illinois. Two small specimens were found with other material but were thought to be pathologic examples of *helicoidea*. They are from Kimmewin Lake, north of Drayton, Ontario. The shells mentioned by Whiteaves (*Ottawa Naturalist*, XIX, p. 65, 1905) from the Kawinogans River, Ontario, as having the outer half of the last whorl free and partly uncoiled are probably this variety. This was listed as *lewisi*. The same form from the same locality, evidently, was listed in the Annual Report, Canadian Geological Survey, XVI, p. 5, 1906, as *Valvata sincera*, four specimens being noted. Two specimens are noted from the Attawapiskat River.

It is apparent, therefore, that this uncoiled form is a true race or variety of *lewisi* having a wide range in Ontario and possibly occurring in other parts of British America. True

helicoidea is known from the Mackenzie River and Alaska. The variety is common in Shakespeare Island Lake, the collection containing 19 specimens from four dredgings, ranging in depth from four to eight feet, always on a mud and sand bottom, with or without vegetation.

The material was submitted to the writer for determination, with other fresh water species from the same lake, by Miss Myra W. Cronk, of the University of Toronto, Toronto, Canada.

A NEW SUBSPECIES OF POLYGYRA FROM IDAHO

BY H. A. PILSBRY AND JUNIUS HENDERSON

POLYGYRA MULLANI TUCKERI, n. subsp. Pl. 5, figs. 8, 9, 10.

Shell depressed; color medium to dark brown; whorls $5\frac{1}{2}$, closely coiled, increasing gradually in size from apex to aperture; suture well impressed; umbilicus open, but partly covered by the reflected columella; aperture lunate; lip light-brown, expanded, rather thinly so at the periphery, widened toward the columella by slightly-developed lamellae above and below; type specimen exhibiting some irregular, microscopic, spiral striae on the surface, apparently due to slight wrinkles in the epidermis; surface sparsely covered with short, flattened, scale-like, curved hairs, smaller on the base, which are must better exhibited on a well-preserved, immature paratype, but show on all of the specimens examined. Some specimens have a small, triangular, white parietal tooth, others have none.

Type: No. 17001-a, University of Colorado Museum, is non-dentate; greater diameter, not including reflection of lip, 13, lesser diameter 12, altitude 6.5 millimeters. *Cotype No. 1:* Univ. Colo. Mus. No. 17001-b, dentate, diameter 12 by 11, altitude 6 mm. *Cotype No. 2:* Academy of Natural Sciences of Philadelphia, No. 152334; diameter 12.4 by 10.6, altitude 7 mm. Two paratypes are in the collection of their discoverer, Prof. H. M. Tucker, College of Idaho, Caldwell,